

THE RELATIONS OF THE IMAGE AND FACT OF THE SERVICE QUALITY OF BUSWAY WITH USER LOYALTY

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Abstract

The provision of bus rapid transit (busway) in Jakarta aims to provide a high service quality of public transportation, to reduce congestion, and to improve the transportation system. In fact, the success of public transportation depends on the acceptance and loyalty of the user. The image and experience of the user regarding the service quality also has a significant influence. Thus, the aim of this study is to explore the relations among constructs, i.e. user loyalty, image, and experience regarding the service quality of BRT. Responses from the user in the first corridor of BRT system was analyzed using structural equation modeling. The results show that high image owned by the users regarding the service does not necessarily mean a high loyalty shown by the users. Analyses confirm the support of perceived service quality on the loyalty of the user in the future.

Keywords: loyalty, image, fact, quality of service, busway

INTRODUCTION

At household level, the average number of cars owned per 100 households was 20.7 and the average number of cars owned per car-owning household was 1.2 (JICA and BAPPENAS, 2001). The results of a mini household visit survey by JICA and BAPPENAS (2000) showed that household ownership of a car in Jakarta was positively correlated with the increase of the household monthly income (see Susilo et al, 2007 for more discussion about motorization in Jakarta). On the other hand, the urbanization and suburbanization increase the magnitude of the problem.

Actually, the growth rate of road length in Jakarta could not anticipate the growth rate of motorization. It means the provision of road infrastructure will always be left behind the growth of motorization. It reveals a challenge to the government in providing transportation infrastructure in order to improve accessibility and mobility. In recent time, the application of transport demand management (TDM), also known as mobility management (MM), becomes a common trend. There are several measures in TDM, while promoting public transportation is one of them. In line with this trend, the Government of DKI Jakarta took an initiative in implementing BRT system.

BRT is a form of customer-oriented transit (bus) combining stations, vehicles, planning, and intelligent transport system elements into an integrated system with a unique identity (Wright and Fjellstrom, 2002). BRT typically involves bus-way corridors in segregated lanes – either at-grade or grade separated – and modernized bus technology. This system is considered as a suitable system in developing countries because it can be implemented at relatively lower cost and lower technology compared with other mass rapid transit system. Moreover, it can also be operated without a massive structure construction since it can be operated using the existing road corridors. However, consequently, it needs a dedicated line from the existing road corridor that will suddenly increase the traffic

congestion (which is already present) and attract road user resistance. For further explanation regarding the advantages and disadvantages of the system, please see Wright (2002).

TransJakarta Busway is a new transportation system, compared with TransMillenio in Bogota that started almost eight years earlier. In Jakarta, the first BRT corridor, operated by TransJakarta Company, was essentially planned and implemented during the 9-month period, from May 2003 until January 2004 (Ernst, 2005). A 12.9 km initial closed-system BRT corridor began operation on January 15, 2004, which started from Blok M bus terminal and ended at Kota Station (from north to south on the main road corridors). In the first year of operation (2004), 15.9 million passengers traveled using this system (approximately 44,000 passengers per day or 3,600 persons/hour/two directions). The average load factor during the week was 91% and during weekend was 75%, while the highest load factor during the evening peak on weekdays was 143% (BP Trans Jakarta Bus Way, 2005).

The existence of busway in Jakarta has an aim to provide the deserved passenger a safety, fast, comfort, and convenience service of public transportation. Busway has also an intention to inspiring the citizens of Jakarta to alter their transportation modes to this mode and to reduce the overabundant traffic in Jakarta. Another benefit of the implementation of busway is to create a scheduled public transportation's service system, to increase an integrated public transportation services, and to apply an effective ways of ticketing system.

To make this plan works out, the government, i.e. the operator, should provide a high service quality of busway to attract the passenger. The government and the operator should also figure out the way to make passenger keeps in interest in making use of this mode. On the other hand, the passengers have their own perceptions regarding the service quality in both conditions, i.e. before and after the service available. Community, user and non-user, is possible to have any images about the service, even good or bad images, far before the usage. It is also possible and logical that user will expect to experience a satisfied service in the reality. If the image is in line with the perceived experience (fact) and user have an enough satisfaction, it can be expected that user will tend to be loyal.

Study about service quality of public transportation in developing countries is still very limited. The number of study becomes smaller when the study focuses on the aspect of loyalty, while Joewono and Kubota (2007a, b, c) are the exception. Most of the study employed data from developed countries, while it is argued that the nature of developed and developing countries is different.

The basic motivation of this study is to answer the question regarding the relations between image, perceived fact, and user loyalty. Thus, the aim of this study is to explore the relations of user loyalty with the image and fact regarding the service quality of bus rapid transit in Jakarta. The study employs a questionnaire survey to investigate the opinions of busway users in Jakarta, Indonesia. The users were asked to express their image regarding the service quality, perception regarding the experienced service quality, and future decisions as an expression of user loyalty. The analysis applies structural equation modeling to develop a simultaneous model to explore the relations, as well as to find the important aspects of service quality.

In the sections that follow, section two provides a brief explanation of the service quality and user loyalty. Data collection and description are provided in section three,

while section four provides the analysis and discussion of the results. Section five concludes the result of study.

USER LOYALTY AND QUALITY OF SERVICE

Loyalty and frequently transactions behavior are two different things. It means a frequent user does not necessarily a loyal user. Frequently transactions behavior exists when the passenger aspect of pleasures involved into a service, thus repeated passengers in making use of the service becomes available. On the contrary, number of usage cannot solely explain the loyalty of the user of service. Loyalty can be divided into four steps, namely cognitive, affective, conative, and actions (Putri, 2007). It means there are several attributes or decisions to explain loyalty.

Firstly, passenger usually will be loyal at cognitive aspect, since cognitive loyalty based on functional characteristics, especially on budget, benefits, and quality of service. If not all of those three factors are good enough, then the passenger would be easier to leave this public facility and move to another public facilities. The next step is the affective loyalty. This type of loyalty appears, if it is supported by satisfactions factor and made this object being such a preference. In this step, susceptible passenger focused on other factors, which is unsatisfying facilities or even trying other facilities.

Conative loyalty is an intimate commitment of loyalty to do something. Conative style is the personal "how" tasks are being processed, where people are motivated simply by different instinctive conative styles (Wikipedia, 2008). The last step is actions in which willingness of loyalty to expand behavior and action exists. A purpose that followed by motivations is one of the conditions that is pointing at preparation of the action and wants (desires) to control the obstacles. In fact, only several numbers of passengers have this type of loyalty. In many cases, the passenger does not even have any possibility or chance to move to other public facility.

One important factor that influences passenger's loyalty is passenger satisfaction. Passenger satisfaction is the measurements of gap between passenger's image and fact to show what they feel or receive. If what they have were exactly what they want or even more than what they expected, they would be feeling satisfy or even very satisfy. In other words, the higher the service quality, the higher the satisfaction the user will feel. In the case of public transports, the gap between image and fact has exactly accepted by the passenger. If they were satisfied then they will come back to use this facility, and being more loyal than before, or they will recommend this facility to other.

Image is something cannot be bought. The only way to get it is by an effort that needs time or even a long period. Meanwhile, it is also possible to disappear in a second, thus positive image of service becomes very important. Many experts believe that simply by image, passenger could classify any facility that they will use in the future.

One of the most important things is what kind of service quality that passengers accepted to make them satisfied with the service or facility, as service quality will influence passenger's satisfaction. Service quality is a measure of how well the service level that is delivered matches customer expectations, while delivering quality of service means conforming to customer expectations on a consistent basis (TRB, 1999). If the facility provides a good service then it will be easily to get their loyalties. There are several things to do to obtain a high service quality, such as qualified product, gains benefits, valuable price, or all the time services.

DATA COLLECTIONS

Questionnaire survey was employed in this study, where the respondent from seven corridors was selected by simple random sampling in the terminal (off-board) only. In this article, only the respondent from the first corridor (Blok M- Kota) was reported. The distribution time was April 12–19, 2008, both weekend and weekday, as well as peak and off-peak period. In this study, 12 surveyors distributed the questionnaire.

This questionnaire consists of six parts with 71 questions, including a provided detail explanation for each part so that respondent would fill the questionnaire in the right way. Six parts of the questionnaire are trip characteristics, financial matters, comparison of busway with previous mode of transport, evaluation of busway service quality, loyalty, and user characteristics.

The first part of the questionnaire elaborates trip characteristics of the user, while the last part (part six) explores the detail characteristics of the passenger. Part two consists of questions that investigating respondent financial background, such as monthly salary and total spending cost for busway.

Part three asks the user to rate selected aspects of busway's service quality by comparing with other mode of transport before the existence of busway. Respondent was given a 5-point scale rating to rate the level of service quality, ranging from "much worse" indicated by 1 to "much better" indicated by 5. Part four of the questionnaire explores the user perception of busway's service quality in two conditions, namely based on the image of busway the user have and the fact (perceived service quality) of existing service. In this part, a 5-point scale rating is provided to the respondent, ranging from very unsatisfied up to very satisfied.

Moreover, part five consists of questions that showing passenger loyalty. In this part, the loyalty is expressed with two attributes, which each attributes has three future conditions of busway. The two attributes are decision to continue or dropped off in making use of the service and decision to recommend to others (family, relative, or friend) to use the service. In the question regarding decision to continue or dropped off in making use of the service, respondent was given a 5-point scale rating, ranging from "definitely move to other mode" (1) up to "definitely stay in making use of busway"(5). On the other hand, the decision of recommendation has a range from "definitely not recommend" (1) up to "definitely recommend" (5).

DATA ANALYSIS

In this survey, 450 respondents filled in the questionnaire. Descriptive statistics of the respondent appear in **Table 1**. The result of the questionnaire shows that female (52.7%) slightly dominated the usage of busway. Most users of busway are young people, i.e. 16 to 25-years-old (60.6%), where as a single is a dominated user (78%). Monthly income of the respondent ranges from less than one million IDR (28.2%), 1-2.5 million IDR (41.1%), 2.5-5 million IDR (21.8%), and five million IDR or more (8.9%).

The purposes for doing trip are for work (37.3%) and study (31.6%). Home location of the respondent seems as evenly distributed from all part of Jakarta. The reasons for making use of busway are that this mode is faster than other public transportations (42.7%), did not own any car in their family (20.4%), or busway has cheaper fare (18.2%). The rating of

satisfaction regarding the service quality of busway has a range from very dissatisfied (3.3%), dissatisfied (18.9%), fair (56%), satisfied (21.1%), and very satisfied (0.7%).

Table 1 General Characteristics of Respondents (n = 450)

No.	Characteristics	Statistics
1.	Sex	Female (52.7%), Male (47.3%)
2.	Age	16-20-year-olds (24.8%), 21-25-year-olds (35.8%), 26-30-year-olds (20.9 %), 36 year-olds or older (18.1%)
3.	Marital status	Single (78 %), Married (22%)
4.	Educations	Junior High School or less (5.8%), Senior High School (38.7%), Diploma (12%) and Bachelor's degree or higher (43.5%)
5.	Income (IDR)	< 1 million (28.2%), 1-2.5 million (41.1%), 2.5-5 million (21.8%), and over 5 million (8.9%)
6.	Home's Locations	Central Jakarta (20.7%), North Jakarta (9.1%), South Jakarta (19.8%), East Jakarta (10.2%), West Jakarta (22.4%), Others (17.7%)
7.	Cars ownership	Did not own any car (39.8%), a unit (40.4%), two units (14.2%), three units or more (5.6%)
8.	Motorcycles ownership	Did not own any Motorcycle (35.8%), a unit (45.6%), two units (14.4%), three units or more (4.2%)
9.	Trip purpose	Work (37.3%), Study (31.6%), Shopping (8.9%), Vacations (8.9%) and other (13.4%)
10.	Reason for making use of busway	Faster trip (42.7%), did not own any car in their family (20.4%), cheaper tariff (18.2%), and other (18.7%)
11.	Overall Satisfactions	Very dissatisfied (3.3%), dissatisfied (18.9%), fair (56%), satisfied (21.1), very satisfied (0.7%)

All analysis reported in this article are completed by employing AMOS software (Arbuckle and Wothke, 1999; Arbuckle, 2003), while all explanations are referring to literature in SEM, e.g. Thompson (2000), Klem (2000), Hair et al. (2006), and Kline (2005). Interested reader can refer to Byrne (2001) or Schumacker and Lomax (2004) to explore structural equation modeling. The reported relationship in the form of SEM in this article appears in **Figure 1**, which explains the relationships between image and fact with loyalty. In the figure, it can also be found the explaining attributes of fact and image regarding the service quality of busway.

The parameters involved in this analysis, as appear in

Table 2, explain structural relationship between constructs, as well as between constructs with attributes as appears in **Figure 1**. Each parameter in

Table 2 represents a specific relation, which is represented by specific notations. The explanation of each notation in the structural model follows a standard explanation of SEM analyses. The symbols at the tail of arrow represent the error variances, and the symbols beside the lines represent the magnitude of the effects (Klem, 2000).

In this section, parameter estimates refer to the model in **Figure 1**, which explains the notations used in the table. The χ^2 of this model is 2894.657 with 432 degrees of freedom. Kline (2005) stated that the hypothesis tested by χ^2 is likely to be implausible, that is to say, it may be unrealistic to expect a model to attain a perfect population fit. In addition, the model χ^2 is affecting by sample size, specifically if the sample size is large. This model has NC (normed chi-square) as high as 6.701, which is bigger than five for reasonable fit. The root-mean-square residual (RMR) of this model is 0.040 which is near to zero as a perfect fit. The goodness-of-fit index (GFI) and the Bentler-Bonnet normed fit index (NFI) of this model are .633 and .691. This is quite small, where the value in the

range of 0.5 – 0.8 means that the model shows a reasonable error of approximation. However, the incremental fit index (IFI) and the comparative fit index (CFI) for these models are .724 and .723, respectively. This value is near to one. According to those measures of fit, it can be concluded that the model is moderately fit.

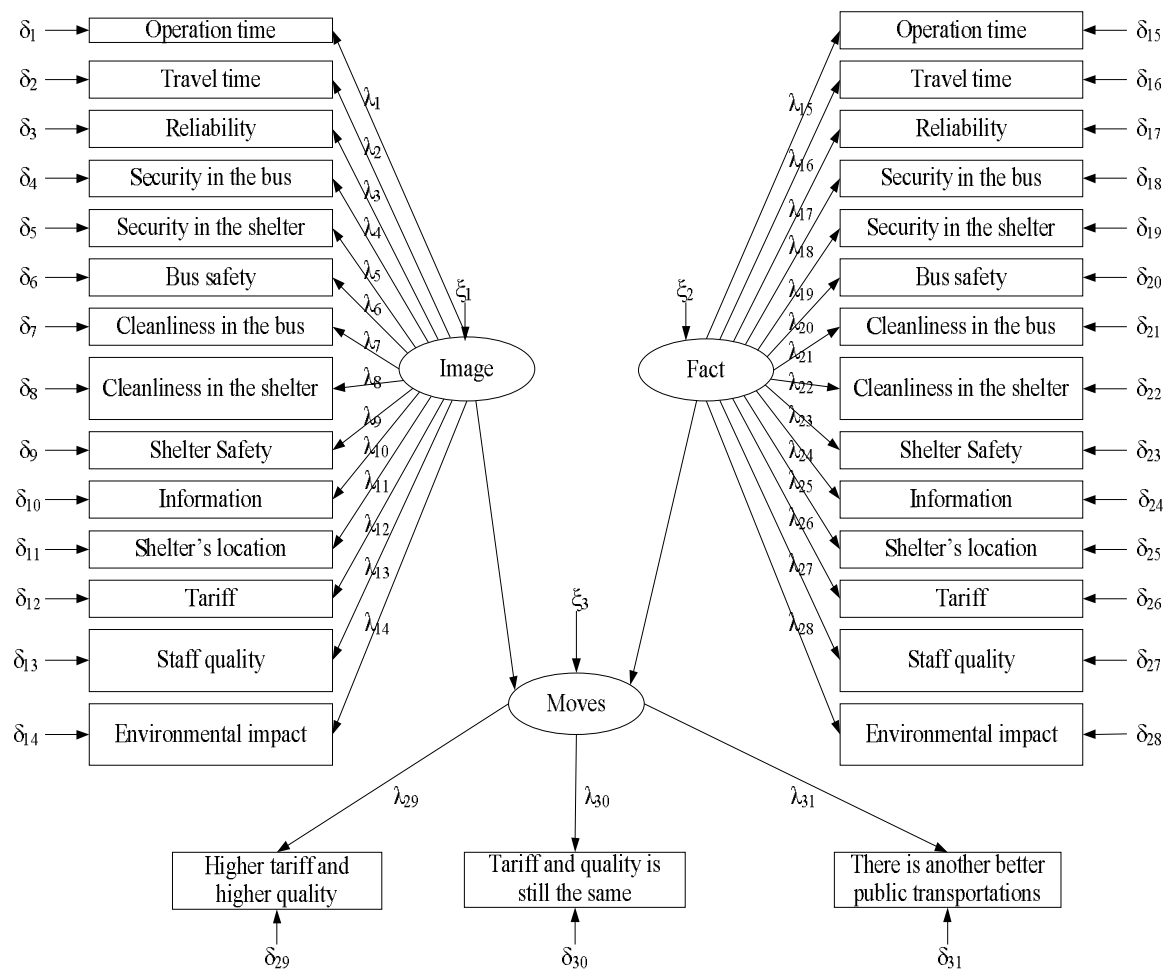


Figure 1 Structural Model of the Relationship between Image, Fact, and Loyalty

In the model, there are two constructs regarding the service quality, namely construct of fact and construct of image. The construct of fact represents user perception of busway regarding their rating of service quality based on the perceived service quality (existing). On the other hand, the construct of image represents the perception of service quality based on the image of the service. The image can be build even far before the existence of service. Many other things possibly influence the image especially in negative things.

For both fact and image, several attributes build the construct. All attributes are statistically significant in explaining the construct. The explaining attributes of image have a loading in a range of 0.655 up to 0.848, while attributes of fact have a loading ranging from 0.487 up to 0.718. It is interesting to notice the difference range of both groups of attributes. Attributes of image have bigger loading factor compared with attributes of fact. Loosely to say that each attributes of service quality has stronger influence in building the construct of image of busway's service quality. On the contrary, each attributes of service

quality has weaker influence in building the construct of fact. By observing the paired loading factor for the same attributes, it can be inferred the difference between the image and fact of the service quality of busway.

Table 2 Parameter Estimates

Parameter	Factor Loading	Parameter	Factor Loading
operating time \leftarrow Image(λ_1)	0.848	operating time \leftarrow Fact(λ_{15})	0.574
travel time \leftarrow Image (λ_2)	0.842	travel time \leftarrow Fact(λ_{16})	0.499
reliability \leftarrow Image (λ_3)	0.854	reliability \leftarrow Fact (λ_{17})	0.487
bus's security \leftarrow Image(λ_4)	0.825	bus's security \leftarrow Fact (λ_{18})	0.651
shelter's security \leftarrow Image (λ_5)	0.799	shelter's security \leftarrow Fact (λ_{19})	0.702
safety \leftarrow Image (λ_6)	0.793	safety \leftarrow Fact (λ_{20})	0.694
bus's cleanliness \leftarrow Image (λ_7)	0.761	bus's cleanliness \leftarrow Fact (λ_{21})	0.637
shelter's cleanliness \leftarrow Image (λ_8)	0.732	shelter's cleanliness \leftarrow Fact (λ_{22})	0.652
safety \leftarrow Image (λ_9)	0.735	safety \leftarrow Fact (λ_{23})	0.718
information \leftarrow Image (λ_{10})	0.694	information \leftarrow Fact (λ_{24})	0.603
shelter's location \leftarrow Image (λ_{11})	0.706	shelter's location \leftarrow Fact (λ_{25})	0.597
tariff \leftarrow Image (λ_{12})	0.655	tariff \leftarrow Fact (λ_{26})	0.498
staff quality \leftarrow Image (λ_{13})	0.741	staff quality \leftarrow Fact (λ_{27})	0.560
environmental impact \leftarrow Image (λ_{14})	0.688	environmental impact \leftarrow Fact (λ_{28})	0.534
The higher tariff, the higher quality \leftarrow moves from busway (λ_{29})	0.580		
Tariff and quality is still the same \leftarrow moves from busway (λ_{30})	0.578		
There is another better public transportations \leftarrow moves from busway (λ_{31})	0.756		
	Estimate	S.E.	P
moves \leftarrow Fact (λ_{32})	0.436	0.103	0.000
moves \leftarrow Image (λ_{33})	-0.190	0.063	0.002
Goodness of fit	$\chi^2 = 2894.657$; $df = 432$; $\chi^2 / df = 6.701$ RMR = .040; RMSEA = .113; GFI = .633; AGFI = .579; NFI = .691 IFI = .724; CFI = .723		

In this model, the decision to move to other mode solely represents the construct of loyalty. The other construct (decision to recommend) cannot be retained in the model as not significant. The construct of decision to move to other mode has three significant conditions.

Regarding the testing of hypotheses, it cannot be inferred the relation between the image and fact, as the relation is not significant. The relationship between the perception of user regarding the perceived service (fact) and the decision to stay or move to other mode has positive sign. It is obvious that higher satisfaction of the user, higher tendency of the user to stay in making use of the service. Thus, this model is able to confirm the logic. On

the other hand, the model provides negative relationship between the image and the decision to move to another mode. It is interesting to note that user has a tendency to give more attention on the fact than on the image in deciding the mode of transport they will use in the future. The possible reason for this unusual relationship is the confusion between the image and fact. It is understandable that the image of busway is highly influenced by many other factors and the real condition of the service as well. Although the ideal is, that the image should be free from the influence of existing fact or the current experience. The model provides knowledge that although people have high image of the service, but it does not necessarily means the user will keep in making use of the service. In other words, it can be inferred that good image does not guarantee the loyalty of the user.

CONCLUSIONS

This article refers to the distributed questionnaire to the passenger of busway in the first corridor of TransJakarta Busway. The motivation of this study is to answer several questions regarding the relationships between the perception of image and fact of service quality with user loyalty. Structural equation modeling is employed to analyze the relationship, as well as to select and prioritize the aspect of service quality.

The model has moderate fit, which means that the testing hypotheses and prioritizing the aspects can be completed. All available aspect of service quality in the questionnaire is significant in explaining the construct of image of the service, as well as the construct of fact (perceived service quality). It can be concluded that those attributes (aspects) are important in determining the image of busway and the perceived fact. It is interesting to notice the difference loading of attributes, between the construct of fact and image. Respondent tends to give lower rating to the fact than to the image. As an example, the loading factor of reliability is 0.854 for the construct of image, while the loading of reliability is 0.487 for the construct of fact.

Moreover, the model is able to explain the relationship between image and fact with the construct of decision in the future, i.e. decision to use the service in the future. Positive relation exists between the construct of fact and the decision. Higher satisfaction of the user with the service, higher tendency to stay in making use of the service the user will be.

It is argued that the image was built far before the existence of the service, thus the confusion or interference becomes exist. The decision of the respondent to stay in making use of busway has negative relation with the image. It reveals a fact that the image has a very weak guarantee about the future decision of the user. On the other hand, the model cannot reveal the relationship between the image and the fact.

In this study, loyalty is explained by two attributes, while only one attribute exists in the final model, i.e. the decision to stay in making use of busway in the future. All three conditions have significant relationship with the construct. It means that respondent will stay in this mode in any of these three situations.

Finally, the study shows an important aspect to develop a good image to the passenger. The study also reveals an important attribute of service quality, which is needed to be improved in the future. The government, as well as the operator, should provide more attention to this result of study. The study provides beneficial knowledge to maintain the number of user, as well as to increase the number of passenger in the future. Further study is an imperative to continue this study and it will be beneficial to elaborate other aspects of service quality, satisfaction, and loyalty as well.

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